

Claims

What is claimed is:

1. An intravascular filter having a central axis comprising
an elongate member;
an anchoring member for anchoring the intravascular filter to a vessel wall
attached to the filter member; and
a cutting member disposed on the filter member and generally facing towards the
central axis.
2. The filter of claim 1, wherein the elongate member comprises a first
elongate section having a first end and a second end,
wherein the second end is proximate the anchoring member, and
wherein the cutting member extends from the first end to the second end.
3. The filter of claim 2, wherein when the filter is placed within a body
vessel having a vessel wall, the filter is configured so that the anchoring member contacts
the vessel wall and the first end of the first elongate section is spaced apart from the
vessel wall.

4. The filter of claim 2,
wherein the first elongate section and the cutting member have a first cross section,
wherein the elongate member further comprises a second elongate section having a second cross section, the second elongate member proximate the first end of the first elongate member, and
wherein the first cross section has an outer extent no greater than an outer extent of the second cross section.
5. The filter of claim 2, wherein the cutting member comprises a single edge extending from the first end to the second end.
6. The filter of claim 2, wherein the cutting member comprises a first edge extending from the first end and a second edge extending from the second end.
7. The filter of claim 6, wherein the first edge and the second edge are substantially aligned.
8. The filter of claim 7, wherein the first edge is spaced apart from the second edge.

9. The filter of claim 8, wherein the cutting member further comprises a third edge disposed between and aligned with the first and second edges, the third edge spaced apart from the first and second edges.

10. The filter of claim 8, wherein the space between the first and second edges is wedge shaped.

11. The filter of claim 8, wherein the space between the first and second edges is block shaped.

12. The filter of claim 8, wherein the space between the first and second edges is u-shaped.

13. The filter of claim 1, wherein the anchoring member comprises an inwardly facing cutting member.

14. The filter of claim 1, wherein the filter is a vena cava filter.

15. The filter of claim 1, wherein the filter member comprises metal.

16. The filter of claim 15, wherein the filter comprises stainless steel.

17. The filter of claim 15, wherein the filter comprises a nickel-titanium alloy.

18. The filter of claim 17, wherein the alloy is Nitinol.
19. The filter of claim 1, further comprising a second elongate member having a second cutting member facing generally towards the central axis disposed on the filter member.
20. The filter of claim 19, further comprising a third elongate member having a third cutting member facing generally towards the central axis disposed on the filter member.
21. The filter of claim 1, further comprising a filtering portion for retaining emboli, the filtering portion comprising the first elongate member.
22. A method of making an intravascular filter, comprising the steps of:
providing a filter having a central longitudinal axis and an elongate member at least partially disposed away from the central longitudinal axis;
disposing an edge on the elongate member facing towards the central longitudinal axis.
23. The method of claim 22, wherein the elongate member has a first end and a second end, and further comprising the step of providing an anchoring member attached to the second end.

24. The method of claim 22, wherein the step of disposing an edge comprises the step of electron discharge machining (EDM) the elongate member.

25. The method of claim 22, wherein the step of disposing an edge comprises the step of grinding the elongate member to form an edge.

26. The method of claim 22, wherein the step of disposing an edge comprises the steps of:

providing a slot in the elongate member; and
inserting a blade in the elongate member.

27. The method of claim 26, wherein the step of providing a slot includes the step of laser machining a slot in the elongate member.

27. A method of removing an intravascular filter having an elongate member with an inward facing cutting edge installed in a vessel cavity and partially encapsulated with an endothelial growth, comprising the steps of:

urging the elongate member radially inward and thereby creating a cut in the endothelial growth;

urging the elongate member through the cut in the endothelial growth;

collapsing the filter to a compressed position; and

retracting the filter.

28. The method of claim 27, wherein the step of urging the elongate member radially inward comprises a stepwise urging having a component wherein the elongate member is urged inward creating a portion of the cut and a component wherein the elongate member is permitted to move radially outward.

29. The method of claim 28, wherein the step of urging the elongate member radially inward comprises the step of moving the elongate member in a reciprocating motion alternating between an inward movement and an outward movement.

30. The method of claim 28, wherein the intravascular filter cutting edge has a first end extending out from the endothelial growth and a second end encapsulated in the endothelial growth.